



12.12.07

Chairman Alan Lloyd
Vice-Chairman Bob Epstein
Members of the ETAAC Committee
ARB and ETAAC Staff

Greetings,

Being unable to attend this meeting, we thank you for the opportunity to inform the committee on what we're doing to implement clean energy solutions, comment on the Draft Report and share our thoughts on how California can be more hospitable to and supportive of Clean Energy and Environmental Solutions. This is a sort of case study perspective from a California native in a fuel cell company.

Cenergie Corporation has existing, implementable, highly efficient, cheap, reliable zero-emission energy technology that has been poised for manufacture in the State of California for quite some time. Despite the solidity of the technology, our innovative business model and our eagerness to align our technology and expertise with the various opportunities the State has designed to aid in the implementation of clean energy technology we continue to experience difficulty overcoming various implementation barriers.

Being a small company with limited resources, Cenergie has invested considerable time and made generous financial commitments to provide solutions for California. Unfortunately, we have yet to secure the return commitments required for us to continue further operations and must, therefore, accept offers to move our manufacturing and operations out of California and into the states and countries where business, governments and financial communities are more aware, progressive and the commitments to implement have been successfully negotiated.

Knowing California's desire to play an increasingly national and international role in the global climate challenge, we continue to invite the State, and it's more aware and proactive private entities, to step up to the plate and work with us in addressing the problems and implementing the solutions.

To do this, here are some of the issues we feel need to be addressed.

Economics

For all the Enlightened Capital rumored to be centered in the Golden State, we can't seem to find it.

Due to a lack of awareness and education, what appears to be hyperactive risk aversion, economic trepidation, and inaccessible, out-dated venture capital investment profiles and portfolio standards we are finding it difficult to implement and demonstrate existing, mass manufacturable, zero-carbon technologies and net-negative emission projects in the State of California. This is not the situation in Europe, Asia or elsewhere in the U.S.

The challenge that we face is that we are highly efficient and very independent. With an intelligent financial model coupled with efficient technology and low manufacturing costs due to material recyclability, we operate well on modest revenue streams and don't require the usual enormous capital expenditure synonymous with similar operations. This efficiency, in turn, reduces our initial investment needs and makes us unattractive to capital sources that proclaim innovation and community, but only act on acquisition and exploitation.



We believe that the further, regional expansion of accessible, non-acquisition oriented, implementation focused funds (similar to some of those mentioned in the ETAAC Draft Appendix) to assist Clean Tech Companies with investment and demonstration needs between \$200,000 and \$2,000,000 would help stimulate the rapid development of immediate solutions to a very serious energy and environmental crisis.

RD & Demonstration

There is an undue burden on developing companies to create, demonstrate and bear the costs of implementation. In addition, government legislation too frequently looks to and depends upon the large scale utility companies for the discovery, selection and implementation of new technologies and the administration of subsidies. This is counter productive to both progressive innovation and ethical business.

Enhanced support for the Demonstration component of RD&D in the Draft Proposal is a very key issue. As a commercial company with a Keystone Technology that is entering it's manufacturing phase, with continual R&D, we are very interested in both revenue producing and Technology Demonstration Projects that support not only our technologies, but our various partner's technologies and services as well. However, we consistently find ourselves caught in the Catch-22 between the portfolio standards and profiles of the above mentioned investment scenario and the non-funded verbal-only support of local governments.

California is an overly cautious market. Without local demonstration projects, we have not even seen the commitment of so much as a state or privately issued LOI for either PPAs or investment. As a native Californian, this is embarrassing, for the state. And notwithstanding our eager intention, we cannot redistribute our European investment into California operations on the back of unsecured incentives alone.

Inside California:

Numerous PPA (low-risk) proposals and contracts stuck in negotiation with both public and private entities while being delayed or downgraded from multi-MW Tiered Installations based on successful performance to kW Demo Projects. This means we go from impactful, low-cost, low-risk collaborative projects that assist with capital expenditures in the ramp up of local manufacturing (green-collar jobs and economic development), operations and implementation to insignificant, cost-imbalanced projects which drain our company's resources and that we cannot accommodate.

Outside of California:

The advancement of mass manufacturing and operations as well as numerous multi-MW project implementations based on tangible and fair commitments in the forms of PPAs, LOIs and MOUs made from both sides of agreeing parties.

Clean Tech Flight:

We currently have a 90% complete 25MW per annum Initial Manufacturing Plant for Research & Development and Systems Integrator Training in Riverside County that we have been working diligently to get in operation. This was going to include the initiation of a revenue producing Demonstration TUS Project with one of our California-based pyrolysis partners. However, due to the lack of support and initiative in California, we are suspending the TUS Demonstration Project and moving it and the Manufacturing Plant to another state based on an existing contract.



Having met and developed many partnerships with what we call “Systems Integrator Partners”, technology and service partners that integrate with our fuel cell technology and “Total Utility Solution” (TUS) Waste-to-Energy systems, we have discovered that we are not alone in our experience of “Clean Tech Flight” due to California’s caution:

We recently met and have partnered with another (currently) California-based high-performance, A.Q. standards-setting pyrolysis company with the intent of implementing our TUS system in California only to find that we are now partnered with them in final negotiations and project financing for an open-ended multi-MW TUS project and the establishment of a 250MW Mass Manufacturing Plant – in South Korea.

Hydrogen

We all know that Hydrogen is the most abundant element in the universe and that it is found in over 75% of all matter, but the coming Hydrogen Economy is not just HFCVs and it isn’t limited to the Hydrogen Highway (as the Draft Report would to indicate).

The ETAAC Draft Report greatly neglects the imperativeness of Hydrogen as one of the cheapest sources of clean, Zero-Carbon stationary power.

With Hydrogen derived from waste through pyrolysis, we can generate clean electricity at .07 cents per kWh.

Waste to Hydrogen conversion technologies coupled with fuel cell technology in Non-Combustion, Zero-Emission, base-load electricity generation systems are here for California to exploit now.

The significant benefits of clean Hydrogen as a feedstock for stationary power technology are vital to explore and promote with educational guides, demonstration projects and other public awareness programs. However, the small companies cannot, alone, support the dissemination and initiation of these projects, platforms and their benefits.

For further exploration by the ETAAC (with stake-holders that have expertise in the sectors indicated):

Hydrogen Applications

- Stationary
- Community Distributed Generation
- New Development Infrastructure
- Port and Marine
- Mobile Generation
- Emergency Power

Sources of Hydrogen

- Landfill & Digester Methane
- Municipal, Commercial & Industrial Waste
- Agricultural/Green Waste
- Electrolysis via Solar & Wind

Hydrogen Production Technologies

Hydrogen as a Zero-Carbon Energy source/carrier

A Clean Hydrogen Industry in California



Beyond Combustion:

There are immense economic opportunities and extensive, multiple environmental and public health benefits in utilizing our many waste streams as our energy sources - beyond the use of Combustion Technologies.

With the growing awareness that our carbon cycle is grossly out of balance, we need to focus more attention on and funding toward implementing Non-Combustion Zero-Carbon Technologies and Solutions.

In light of this, we'd like to ask that ETAAC (together with stake-holders that have expertise in the advanced technology sectors indicated) propose and support a study directed toward Waste Management, Energy and related industries.

The goal of the study will be to develop a comprehensive locally and regionally adaptable Guide, or Template, for the redistribution, mitigation and use of community waste streams for regional and local Hydrogen production, distributed electrical generation and community economic development.

Alternatives for Sequestered CO₂

We all know that injecting CO₂ into the ground is a lose-lose-lose proposition that we are pushing off our responsibility to future generations.

How can we support more active policy for the RD&D of alternative uses for sequestered CO₂ in agricultural, clean industrial, bridge biofuels via algal production, polymers, etc. This type of whole-systems thinking is of significant potential and very much in need of support.

Cenergie systems scrub CO₂ from the atmospheric oxygen used in our fuel cells. Part of our commitment to addressing environmental and energy issues is the intelligent utilization of that sequestered CO₂ for the above applications.

But, again, due to the lack of innovative financial support, we are having to develop a fund to support all of the integrating technologies we are working with in order to implement the solutions available. This is the kind of fund that needs to be developed by a legislative incentive and should receive support from the State instead of small companies.

Community Energy and Policy

As we increasingly witness, climate crisis and clean, reliable energy issues are bigger than any centralized utility's control. We need to find ways to allow communities to benefit from their intelligent energy choices, leadership and social-entrepreneurialism.

An examination and correction of legislation and policy which hinders individuals, communities and developments from profitably creating their own Energy Companies, Partnerships and Cooperatives, supplying their own basic needs and then selling the excess self-generated energy back into a straining grid system is needed.



The expansion of policies and regulation to include small scale community self-generation and utility buy-back will not only encourage energy efficiency, stimulate innovation and create competition for cleaner energy, but it will support a sustainability of supply through incentivised production.

Cenergie & the State of California: Perspectives & Opportunity

Cenergie's zero-emission waste-to-energy projects support the State of California's environmental and renewable energy initiatives and will help it to both achieve and exceed its current goals. Cenergie's presence in California will create green-collar jobs, help clean up the environment, alleviate recent energy shortfalls and invigorate brownfield redevelopment.

With California's Renewable Portfolio Standard (RPS) target of 20% by December 31, 2017, the recently passed Global Warming Solutions Act, requiring heavy industry, electric utilities and refineries to limit CO2 emissions to 25% by 2020, LADWP's commitment to boost long-term renewables, as identified in Mayor Villariagosa's Climate Action Plan, to 35% renewables by 2020, the CEC's unanimous adoption of the CPUC and 2030 Challenge Targets, the House of Representatives' passing of the "Energy Independence and Security Act" based on the 2030 Challenge Targets and the recent passing of a bill forbidding the renewal of any new coal-based fuel source contracts, Cenergie AFC technology, TUS Systems and Partner Projects provide a tremendous opportunity to meet these goals and put California's Renewable Energy Initiatives at the forefront of California and the United States.

In 2006 California's gross energy consumption was 295TWh (only 11% renewables). 230TWh of this was sourced in state, 20TWh imported from Pacific NW and 45TWh from US Southwest. This represents a 23% shortfall leaving California dependent on imports for its electricity. Cenergie estimates that at basic in-state manufacturing capacity (3 Mass Manufacturing Plants producing 250MW per shift per year) it can provide power to cover 1/3 of California's energy shortfall with clean, zero-carbon generation while sequestering CO2 and producing pure H2O.

Over the last several decades, California has experienced an erosion of its manufacturing base, resulting in a loss in jobs, a reduced tax base and idle brownfields. Revitalization of its manufacturing base and the initiation of cross-sector energy projects remains key as it can provide much needed jobs in lower-income urban and agricultural communities while expanding a productive mix of job types in the state.

We recognize that the environment, community and economic renewal go hand-in-hand and, therefore, have a keen interest in driving community renewal projects and contributing to cleaning up the environment by establishing urban manufacturing bases in Southern, Central and Northern California that will provide cheap, clean energy while increasing employment and economic opportunity in some of California's harder hit communities. The anticipated manufacturing employment to external complementary industry job development is 1 to 4; that is, for every one manufacturing job there will be an additional four complimentary jobs created.

The establishment of mass fuel cell manufacturing will also become a catalyst for the alternative energy market. Cenergie anticipates that successful operation of model zero-emission projects, such as Cenergie's Landfill and Wastewater Methane to Fuel Cell Generation, Total Utility Solution MSW-to-Energy and Solar & Wind Electrolysis Projects will attract significant interest in California from the rest of the United States and the world. Unfortunately, California is lagging behind many states and countries in the significant support and implementation of such projects.

Integrated Urban Redevelopment and Suburban Expansion projects also present unprecedented opportunities for alternative energy companies, their utility partners, engineering/construction firms, land developers and the government to work together to bring large-scale Green Energy solutions to service the energy needs of the communities and industry.



The initiation and future expansion of such projects will provide significant immediate employment in engineering, services and the financial sector with new skills and exportable expertise. Skills in engineering, assembly, electrical engineering, servicing, IT and commercial sectors, process manufacturing and chemical engineering are just a few required by this endeavor.

In addition, there are many Joint Venture opportunities with California firms to service the increased demand for clean, reliable, zero-emission energy in California and the Western United States. This industry will include systems integrators, biotechnology, civil engineering, materials resources, consultancy, process manufacturing, construction, financial services and sales and marketing services.

Once established, Cenergie and its partners will have developed a solid foundation from which to help lead the ever-burgeoning California alternative energy market, especially with the Governor's support and commitment to the new Hydrogen Economy.

About Cenergie

Cenergie (www.cenergie.com) makes zero-emission, high efficiency, mass manufacturable Alkaline Fuel Cells (AFC) that are directly price competitive with conventional energy production. When combined with our Total Utility Solution (TUS) Waste-to-Energy system they can provide a lower cost per kWh. Our primary markets are stationary, distributed generation, mobile and marine fleet applications.

We are 100% vertical and our 'Product of Service' business model is intrinsically connected to our environmental and social agendas while creating high profitability through technical efficiency and material recyclability.

Our Fuel Cells provide cheap, high-efficiency 24 hour constant base-load with zero emissions and no noble metals. They are silent, very low temperature, quick-start, flexible, recyclable and reliable...and produce .5 liters of pure H₂O per kWh.

In addition, we are working toward a number of clean h₂ solutions and enjoy collaborating with solar, wind, tidal, electrolysis, landfill methane reformation, waste gasification, algal and other partner technologies to make this happen.

We have operations in the UK, EU and are currently beginning to manufacture our 3rd generation AFC at our facility in France. We have an Initial Manufacturing Plant (IMP) in Riverside County, California that is 90% complete (R&D, Systems Integrator Training, 25MW per annum per shift) and are planning 3 Mass Manufacturing Plants (MMP) in CA that will produce over 750MW per annum per shift by year 5. The first of these MMPs is proposed for Los Angeles.

our primary markets are...

stationary power & distributed generation
residential, commercial, industrial and municipal developments
ports, marine fleets and shore-to-ship power
emergency, studio and mobile generation sets

the technology is...

100% vertical
10%-25% of the cost of leading fuel cell technologies
.07-.08 kwh
60-70% efficiency
99.9999999...% reliable
zero emissions
pure h₂o by-product
no noble metals
commodity materials
95% recyclable
80% refurbishable
low temperature
liquid electrolyte
no catastrophic failure